



EC Annual Review
Effective Date 01/31/12

GROWING AREA EC

Little Deer Isle, the Island of Deer Isle including Stonington, and
various surrounding small uninhabited islands.

ANNUAL REVIEW for 2010

Report Date: January 31, 2012

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APPROVAL

Division Director:

Kohl Kanwit

A handwritten signature in blue ink, appearing to read "Kohl Kanwit", is written over a light blue rectangular background.

1/31/2012

Print name

signature

Date: _____



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Figure 1. Growing Area EC (north), with Active Water Stations

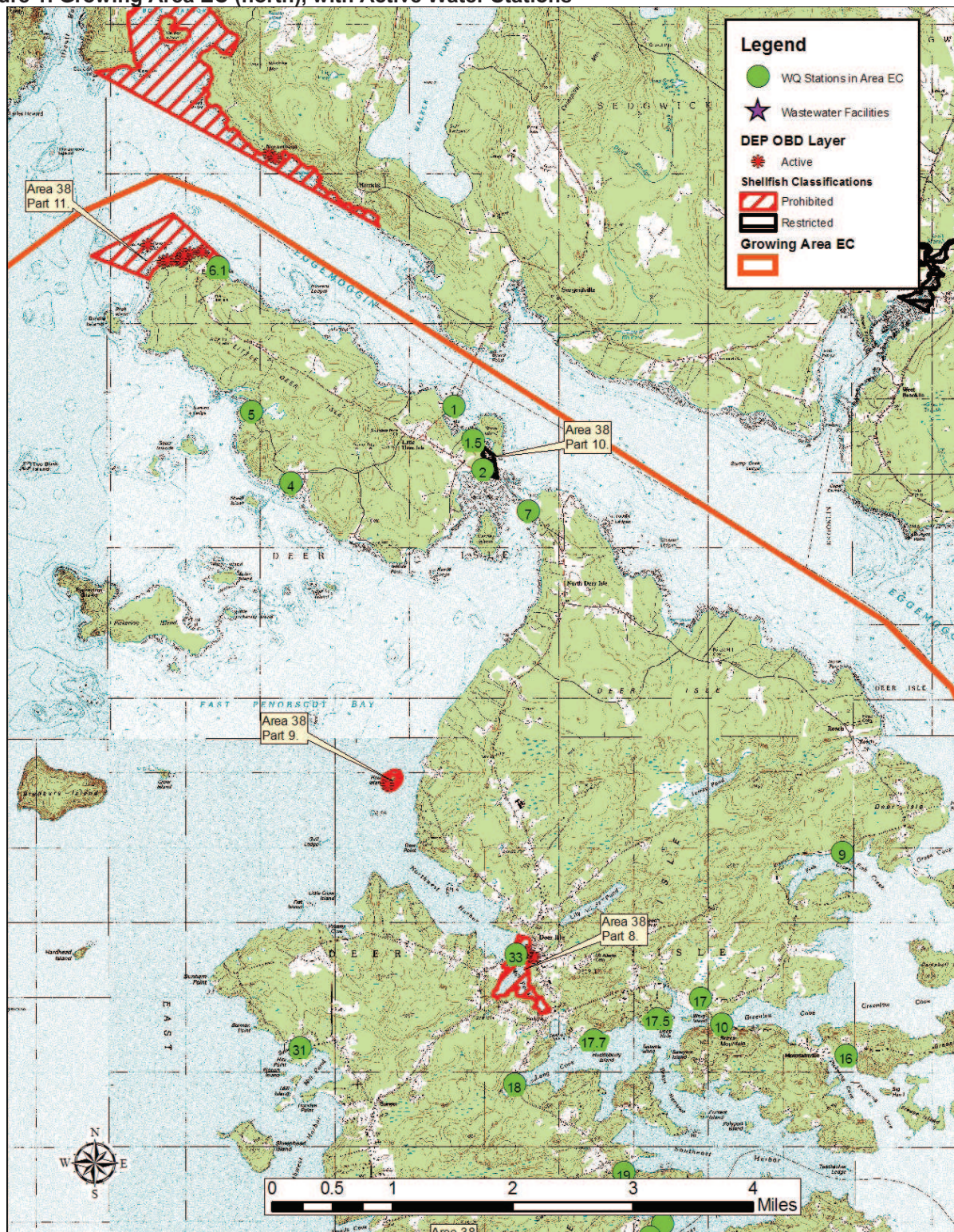




Figure 2. Growing Area EC (south), with Active Water Stations





Executive Summary

This is an annual report for growing area EC written in compliance with the requirements of the 2007 Model Ordinance and the National Shellfish Sanitation Program.

Growing area EC is located in Hancock County and consists of numerous islands that are located in Penobscot Bay and Blue Hill Bay. The Islands of Deer Isle and Little Deer Isle make up the majority of this growing area, with several surrounding islands most of which are small and uninhabited. The majority of approved and restricted stations met their NSSP classification standard in 2010. Stations that did not meet their standards are EC 4 (Blastow Cove), 14 (Western Cove), and 19.9 (Inner Harbor), requiring the downward reclassification of these coves from approved to restricted. Those coves were reclassified on January 6, 2011. There are no recommendations for upward classification at this time.

All areas with known pollution sources remain properly classified within effective closures prohibiting the harvest of shellfish. There are approved, restricted, and prohibited classifications within this growing area. Prohibited and restricted areas have sample sites located on classification boundary lines or have dilution calculations to support the size of the closure.

The next sanitary survey report is due in 2011. The next triennial evaluation is due in 2014.

Growing Area Description

This growing area consists of numerous islands that are located in eastern Penobscot Bay and southwestern Blue Hill Bay (Figures 1 and 2). The Islands of Deer Isle and Little Deer Isle make up the majority of this growing area, with several surrounding islands most of which are small and uninhabited. The area is primarily rural, with a low population density. It is an island community that is mostly residential with commercial fishing and tourism being the main industry. There are 23 licensed overboard discharges (OBDs), all encompassed by prohibited areas. There is one municipal waste water treatment plant (WWTP) that remains unchanged from its original design and continues to operate within its license limits.

Current Classification(s)

At the end of the 2010 review year, shellfish growing area EC had areas classified as:

Approved

- Sample stations associated with approved classification: EC 1, 1.5, 4, 5, 6.1, 7, 9, 10, 12, 13, 14, 16, 17, 17.5, 17.7, 18, 19, 19.9, 20, 21, 21.8, 21.9, 22, 22.1, 22.3, 22.4, 23.5, 26.2, 26.7, 26.8, 27.4, 27.8, 28.4, & 31.

Restricted

- Area No. 38 Part 2, Eastern portion of Burnt Cove, Stonington, restricted due to water quality not meeting approved standards. Sample station associated with approved classification; EC 27.



- Area No. 38 Part 7, Northwest branch of Crockett Cove, Deer Isle and Stonington, restricted due to water quality not meeting approved standards. Sample station associated with approved classification; EC 28.
- Area No. 38 Part 10, Little Deer Isle to Stave Island, Deer Isle, restricted due to water quality not meeting approved standards. Sample station associated with classification; EC 2.

Prohibited

- Area No. 38 Part 1, Burnt Cove, Stonington, prohibited due to licensed OBD. Sample station associated with classification; EC 26.9.
- Area No. 38 Part 3, Burnt Hill Cove, Stonington, prohibited due to licensed OBD. Stations EC 26.2 and 26.7 are in Approved areas adjacent to this Prohibited zone and serve as boundary stations.
- Area No. 38 Part 4, Stonington Harbor, Stonington, prohibited due to licensed OBDs, and municipal WWTP. Sample stations associated with classification; Stations EC 23.5 and 26.2 are in Approved areas adjacent to this Prohibited zone and serve as boundary stations.
- Area No. 38 Part 5, St. Helena Island, Merchants Row, Stonington, prohibited due to licensed OBD. Classified by dilution calculation; no stations.
- Area No. 38 Part 6, Devil Island, Merchants Row, Stonington, prohibited due to licensed OBD. Classified by dilution calculation; no stations.
- Area No. 38 Part 8, Northwest Harbor and the Mill Pond, Deer Isle, prohibited due to licensed OBDs. Sample station associated with classification; EC 33.
- Area No. 38 Part 9, Heart Island, Deer Isle, prohibited due to licensed OBD. Classified by dilution calculation; no station.
- Area No. 38 Part 11, Pumpkin Island to Eggemoggin, Little Deer Isle, prohibited due to licensed OBDs. Station EC 6.1 is in an Approved area adjacent to this Prohibited zone and serves as a boundary station.

Please visit the DMR website to view legal notices:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#EC

Activity during Review Period

9/7/10: Amended Area No. 38, Deer Isle, Stonington, and Merchants Row, to reclassify Burnt Cove, Stonington to Restricted after water quality at station EC 27 exceeded the approved P90 standard.

10/25/10 Monday: Amended Area No. 38, Deer Isle, Stonington, and Merchants Row, to close Webb Cove due to an oil spill from a lobster boat that sank over the weekend. Several boats were vandalized but only one sank, at the site of the Sunshine seafood facility. This occurred late Saturday night/early Sunday morning. Maine DEP was on site to supervise the recovery on Monday. The DEP reported that the spill was minor, maybe 6-10 gallons of motor oil, and did not appear to affect anything outside the immediate area of the vessel sinking (around the pier of Sunshine Seafood).

10/28/10 Thursday: Amended Area No. 38, Deer Isle, Stonington, and Merchants Row, to change the Closed status to Open in Webb Cove after shellfish collected on this morning tested negative for hydrocarbons. Test was a boil and sniff test developed by NOAA and adopted for use by DMR.



Water Quality Review and Discussion

Table 1 lists all active approved, restricted, and prohibited stations in Growing Area EC, with their respective Geomean and P90 calculations for 2010. Please refer to Appendix A for a key to interpreting the headers on the columns of Table 1. The approved and restricted standards for each station are also displayed in Table 1. These standards will fluctuate yearly as a result of the DMR transition from a most probable number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of sample analyzed by MPN versus MF. The total number of data points used in the calculations is displayed in the Count column and includes both MPN and MF values. The number of data points analyzed by MF is displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method. A more detailed explanation of this transition can be found in central files. Table 1 shows classifications as of the end of the 2010 calendar year and does not reflect reclassifications made in January 2011 as a result of the water quality review. Three approved stations failed to meet the approved classification standard at the end of 2010, and were consequently reclassified to restricted on January 6, 2011.

The majority of approved and restricted stations met their NSSP classification standard in 2010. Approved stations that did not meet their standards include EC 4, 14, and 19.9. Station EC 4, located in Blastow Cove, Little Deer Isle, had a P90 calculation of 17.8 FC/100ml at the end of 2009. In 2010, it received an elevated score of 1020 FC/100ml on October 27th. At the end of 2010, this station exceeded the standard for approved classification. Reasons for the high score are unknown at this time. All of Growing Area EC is scheduled for shoreline survey in 2011 and all coastal properties will be checked for septic malfunctions and other pollution sources. Blastow Cove was reclassified from approved to restricted on January 6, 2011. Although station EC 2 met the approved classification standard at the end of 2010, it will not be reclassified due to variability of the data within the dataset, combined with its P90 calculation being above 95%.

Station EC 14, located in Western Cove, Deer Isle, has shown an increase in P90 scores over the past three years, increasing from a P90 of 31% of its approved standard at the end of 2008 to 91% at the end of 2009 and continuing upward to 108% at the end of 2010. All of Growing Area EC is scheduled for shoreline survey in 2011 and will be checked for septic malfunctions and other pollution sources. Western Cove was reclassified from approved to restricted on January 6, 2011.

Station EC 19.9, located in Inner Harbor, on the Deer Isle/Stonington town line, has shown a steady increase in P90 calculation for the past four years and now does not meet approved standards. Reasons for the high score are unknown at this time. All of Growing Area EC is scheduled for shoreline survey in 2011 and will be checked for septic malfunctions and other pollution sources. Inner Harbor was reclassified from approved to restricted on January 6, 2011.

Station EC 26.9 meets the approved standard but is classified as prohibited because it serves as a boundary station for a licensed OBD. Station EC 19.7 is a new station created to evaluate the pollution impact associated with station EC 19.9.



Table 1. Geomean and P90 Scores, Growing Area EC, 2005-2010

Station	Class	Count	MFCCount	GeoMean	SDV	MAX	P90	Appd_Std	Restr_Std
EC001.00	A	30	26	3.4	0.47	80	13.9	32	176
EC001.50	A	30	26	4.3	0.58	160	24	32	176
EC002.00	R	30	26	5.3	0.59	120	30.3	32	176
EC004.00	A	30	26	5.1	0.65	1020	35.2	32	176
EC005.00	A	30	26	2.2	0.17	10	3.7	32	176
EC006.10	A	30	26	2.4	0.3	62	6	32	176
EC007.00	A	30	26	3.1	0.41	33	10.6	32	176
EC009.00	A	30	26	3.1	0.38	33	9.8	32	176
EC010.00	A	30	26	4.1	0.49	72	18.1	32	176
EC012.00	A	30	26	2.5	0.29	42	6	32	176
EC013.00	A	30	26	2.2	0.15	11	3.5	32	176
EC014.00	A	30	26	5	0.65	1380	34.4	32	176
EC016.00	A	30	26	2.5	0.28	22	5.9	32	176
EC017.00	A	30	26	4.8	0.53	180	23.4	32	176
EC017.50	A	30	26	2.7	0.42	220	9.3	32	176
EC017.70	A	30	26	2.5	0.19	9.1	4.5	32	176
EC018.00	A	30	26	3.1	0.34	24	8.7	32	176
EC019.00	A	30	27	2.9	0.36	46	8.7	32	173
EC019.70	new	6	6	4.2	0.21	8	8	31	163
EC019.90	A	30	26	5.3	0.66	600	38	32	176
EC020.00	A	30	26	5.2	0.61	520	31.9	32	176
EC021.00	A	30	26	3.3	0.44	124	12.5	32	176
EC021.80	A	30	26	2.3	0.17	8	3.8	32	176
EC021.90	A	30	26	2.8	0.41	44	9.5	32	176
EC022.00	A	30	26	3.2	0.36	27	9.2	32	176
EC022.10	A	30	27	3.5	0.43	62	12.7	32	173
EC022.30	A	30	27	3	0.46	380	11.9	32	173
EC022.40	A	30	26	2.7	0.41	128	9.2	32	176
EC023.50	A	30	26	2.4	0.23	16	4.8	32	176
EC026.20	A	30	26	4.1	0.56	360	21.8	32	176
EC026.70	A	30	26	2.6	0.27	16	5.9	32	176
EC026.80	A	30	26	2.6	0.4	96	8.8	32	176
EC026.90	P	30	26	2.9	0.38	180	9	32	176
EC027.00	R	30	26	6.6	0.79	1260	68.3	32	176
EC027.40	A	30	26	3.8	0.46	70	15.1	32	176
EC027.80	A	30	26	3.2	0.38	43	10.1	32	176
EC028.00	R	30	26	8.5	0.75	300	78.9	32	176
EC028.40	A	30	26	4.5	0.57	114	24.5	32	176
EC031.00	A	30	26	3.1	0.39	68	10.1	32	176
EC033.00	P	30	26	2.9	0.3	18	7.3	32	176



All approved and prohibited stations that were active at the beginning of 2010 were sampled at least 6 times following the systematic random sampling (SRS) schedule (Table 2). Stations EE 1.5 and 27 serve as DMR's flood re-opening stations and had samples collected under Adverse (Flood Closure) conditions to evaluate flood impact.

Table 2. EC Samples Collected in 2010

Station	Class	Adverse		Random		Total	Comments
		Closed	Open	Closed	Open		
EC001.00	A				6	6	
EC001.50	A	22			6	28	Flood Station
EC002.00	R				6	6	
EC004.00	A				6	6	
EC005.00	A				6	6	
EC006.10	A				6	6	
EC007.00	A				6	6	
EC009.00	A				6	6	
EC010.00	A				6	6	
EC012.00	A				6	6	
EC013.00	A				6	6	
EC014.00	A				6	6	
EC016.00	A				6	6	
EC017.00	A				6	6	
EC017.50	A				6	6	
EC017.70	A				6	6	
EC018.00	A				6	6	
EC019.00	A				6	6	
EC019.70	A				6	6	New station added 7/13/10
EC019.90	A				6	6	
EC020.00	A				6	6	
EC021.00	A				6	6	
EC021.80	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking. Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC021.90	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking. Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC022.00	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking. Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC022.10	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking. Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC022.30	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking.



Station	Class	Adverse		Random		Total	Comments
		Closed	Open	Closed	Open		
							Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC022.40	A			1	5	6	Placed in Closed status on 10/25/10 due to a possible oil spill from a vessel sinking. Reopened on 10/28/10. Regular SRS sample collection occurred during closure.
EC023.50	A				6	6	
EC026.20	A				6	6	
EC026.70	A				6	6	
EC026.80	A				6	6	
EC026.90	P			6		6	
EC027.00	A	8	2		5	15	Reclassified A to R on 9/7/10
	R	4			1	5	
EC027.40	A				6	6	
EC027.80	A				6	6	
EC028.00	R				6	6	
EC028.40	A				6	6	
EC031.00	A				6	6	
EC033.00	P			6		6	

Figures 3 and 4 show the P90 trends over the past three years, for all Approved, Restricted and Prohibited stations in growing area EC. During the transition from MPN to MF analysis method, the Approved standard will decrease every year, until all samples have been analyzed by the MF method. In order to show the trend of the P90 value over the years, the calculated P90 scores are expressed as a percentage of the approved standard; any station showing the 2010 column on or above 100 percent does not meet the standard for approved classification. Generally, most stations have remained consistent with prior year's results except those already discussed in the beginning of this section.



Figure 3. Area EC P90 Scores for All Stations (expressed as the percent of the approved standard), 2008-2010 (Chart 1).

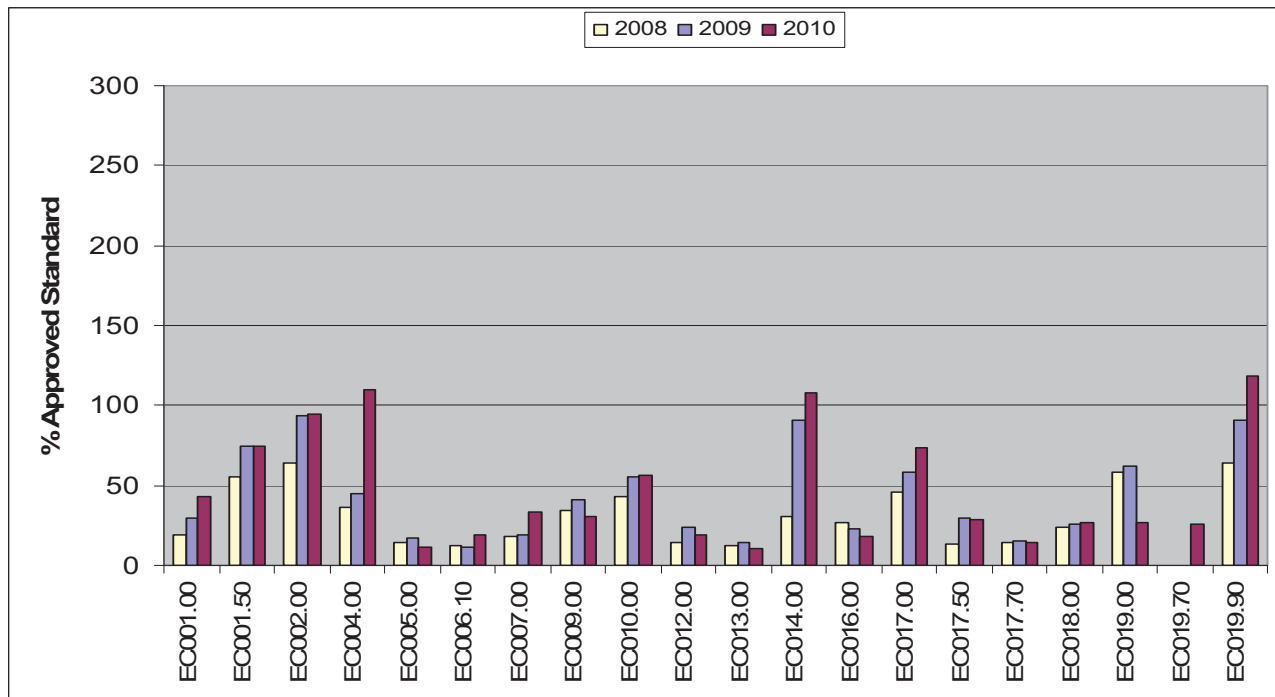
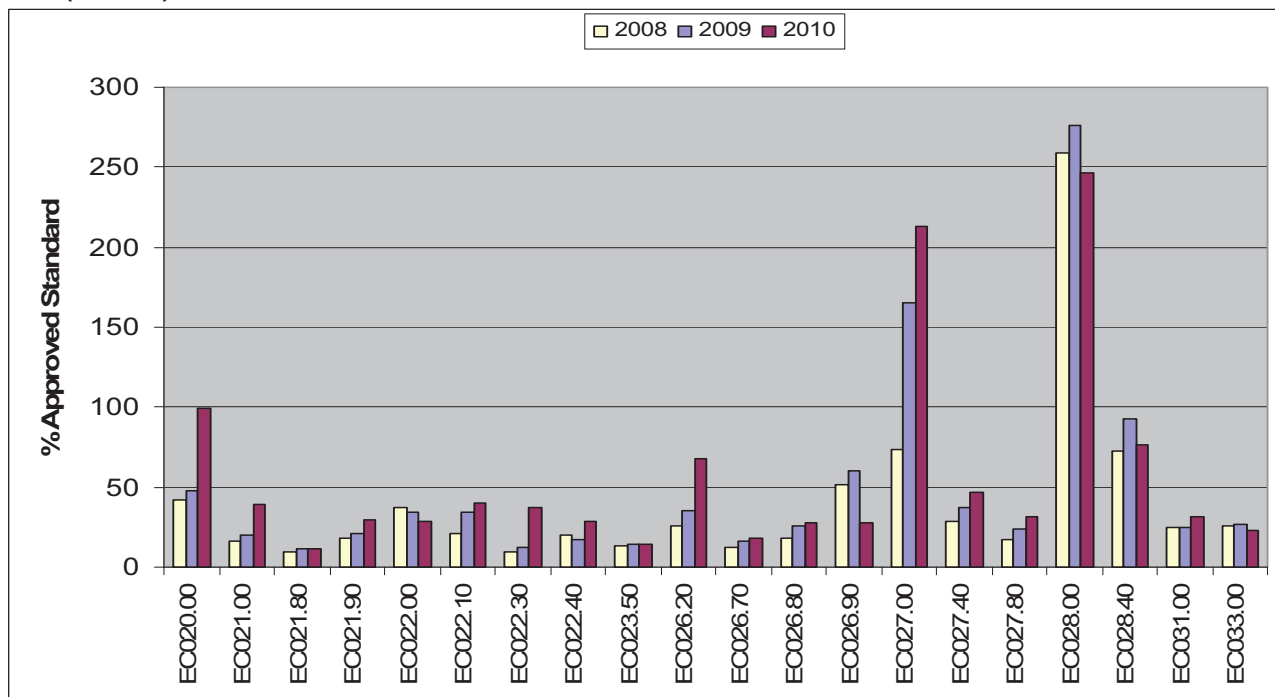


Figure 4. Area EC P90 Scores for All Stations (expressed as the percent of the approved standard), 2008-2010 (Chart 2).





Upward Classification Changes

There are no upward reclassifications proposed in this report.

Shoreline Survey Activity

Drive through surveys of growing area EC were completed on the same dates as random water sampling runs. In 2010, drive through surveys on the Little Deer Isle portion of growing area EC were completed on the following dates: April 6, April 27, June 8, July 13, August 24, and October 27; drive through surveys of the Deer Isle/Stonington portion of the growing area were completed on April 7, May 19, June 8, July 13, August 24, October 26, November 3, 15, and 30. No changes in pollution sources were noted at the time of drive through surveys.

Aquaculture/Wet Storage Activity

There are 6 aquaculture leases and 1 wet storage sites in Growing Area EC (Tables . All are located in Approved areas.

Table 3. Aquaculture Lease Sites in Area EC

Site ID	Name	Primary Species	Expiration Date
PEN LD2	Danny Weed	American Oysters	2/20/2013
PEN SI	Friendship International	Green Sea Urchins	3/30/2012
PEN SN1	Jack Hamble Jr.	Blue Mussels	7/31/2015
PEN SN2	Jack Hamble Jr.	Blue Mussels	5/29/2015
PEN STH	Downeast Aquaculture	Blue Mussels	3/15/2016
PEN STH2	Pemaquid Mussel Farms	Blue Mussels	1/226/2020

Table 4. Wet Storage Sites in Area EC

Cert. No.	Name	Area Classification
ME 201 SP	Carter's Seafood	Approved

Recommendation for Future Work

Growing area EC is scheduled for a 12 year Sanitary Survey in 2011. Field work will include shoreline surveys, stream samples, and WWTP evaluations.



Appendix A. Key to Water Quality Table Headers

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.